


1. (Twice Amended) A method of determining concentrations of constituent components of whole undiluted blood, including:

generating a plurality of radiation frequencies each determined to distinguish one said constituent component from another said constituent component, and to minimize the effect of radiation scattering and to maximize radiation absorbance by whole, undiluted blood;

irradiating a sample of whole, undiluted blood with at least three of said radiation frequencies, through a depth of said sample chosen to minimize radiation scattering by whole, undiluted blood;

 detecting intensities of said radiation frequencies, after passing through said depth of said sample, at a distance from said sample, and over a detecting area, both chosen to minimize the effect of radiation scattering by whole, undiluted blood; and

calculating concentrations of each of at least three said constituent components of said sample of whole, undiluted blood, based upon detected intensities of said radiation frequencies, and upon predetermined molar extinction coefficients for each of said constituent components at each of said radiation frequencies.